

**Machine translation JP2003018558****( Bibliographic data + Summary + Claim )**

(19)**Publication country**Japan Patent Office (JP)  
(12)**Kind of official gazette**A publication of patent applications (A)  
(11)**Publication No.**JP,2003-18558,A (P2003-18558A)  
(43)**Date of Publication**January 17, Heisei 15 (2003.1.17)  
(54)**Title of the Invention**TV signal distribution system  
(51)**The 7th edition of International Patent Classification**

H04N 7/10

H04B 3/54

H04L 12/28 100

H04N 7/16

**FI**

H04N 7/10

H04B 3/54

H04L 12/28 100 H

H04N 7/16 A

**Request for Examination**Unrequested**The number of claims**8**Mode of Application**OL**Number of Pages**14(21)**Application number**application for patent 2001-196054 (P2001-196054)(22)**Filing date**June 28, Heisei 13 (2001.6.28)(71)**Applicant****Identification Number**000005821**Name**Matsushita Electric Industrial Co., Ltd.**Address**1006, Kadoma, Kadoma-shi, Osaka(72)**Inventor(s)****Name**Kodama \*\*\*\***Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**Takao Gondo**Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**\*\*\*\* Hidekazu**Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**Taisuke Konishi**Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**Mutsuhiko Oishi**Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**Maebara Noriaki**Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(72)**Inventor(s)****Name**Haruyama \*\*\*\***Address**1006, Kadoma, Kadoma-shi, Osaka Inside of Matsushita Electric Industrial Co., Ltd.(74)**Attorney**

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**Theme code (reference)**

5C064

5K033

5K046

**F-term (reference)**

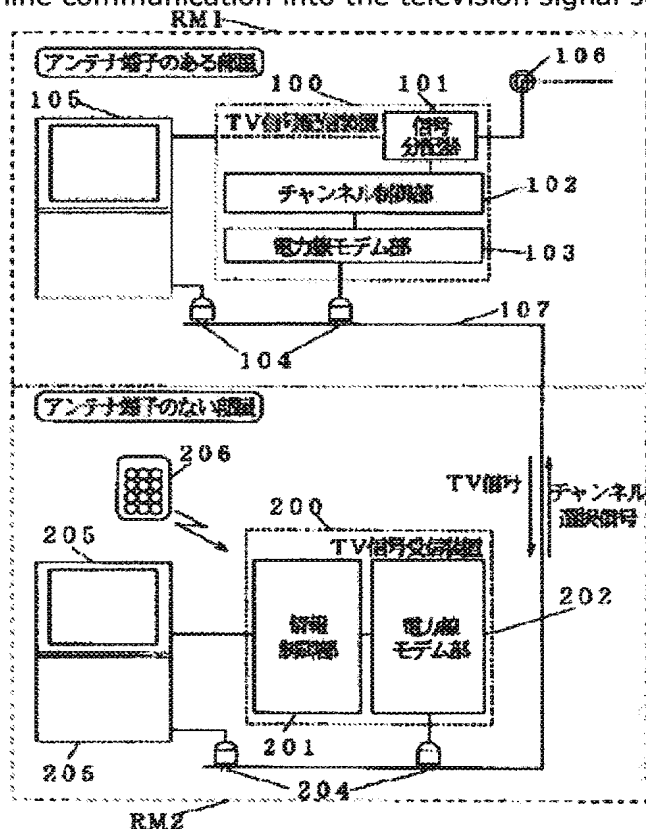
5C064 BA07 BB05 BB10 BC14 BC16 BC27 BD08

5K033 BA01 BA13 DA01 DB23

5K046 AA03 BA01 BB03 CC01 PS02

**Abstract:**

**PROBLEM TO BE SOLVED:** To provide a television signal distribution system with which a user can watch television easily even in a room without an antenna output terminal for a television. **SOLUTION:** A television signal distribution device 100 has a channel control section 102 for selecting a desired channel according to a channel selecting signal transmitted from a television signal receiver 200 to supply the corresponding television signal, and a power line modem section 103 for transmitting the television signal of the selected channel. The receiver 200 has a information control section 201 for transmitting the television signal converted by a section 202 to a television signal reproducing device, and a power line modem section 202 for transmitting the channel selecting signal to the device 100 and converting a signal for power line communication into the television signal selected by the section 102.



**JPO Machine translation abstract:****(57) Abstract**

**SUBJECT** It aims at providing the TV signal distribution system which can view and listen to television easily also in the room without the antenna output terminal for televisions.

**Means for Solution** The channel control unit 102 which supplies a TV signal which the television signal distribution system 100 chooses a desired channel with a channel selection signal sent from the television signal receiving set 200, and corresponds, Have the power line modem part 103 which transmits a TV signal of a selector channel, and the television signal receiving set 200, The information control part 201 which transmits a TV signal changed by the power line modem part 202 to TV signal playback equipment, A channel selection signal is transmitted to the television signal distribution system 100, and it has the power line modem part 202 which changes into a TV signal with the selected channel control unit 102 a signal for power line communications sent out from the television signal distribution system 100.

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**Claim(s)**

**Claim 1** A television signal distribution system which is arranged in a room with an antenna output terminal, and distributes a TV signal to each part store by making a power line into communication media, comprising, A TV signal distribution system which has a television signal receiving set which receives a TV signal which is arranged in a room without an antenna output terminal, and is distributed from said television signal distribution system.

A channel control unit which supplies a TV signal which said television signal distribution system chooses a desired channel from said television signal receiving set with a channel selection signal sent via a power line, and corresponds.

It has a power line modem part by the side of distribution which changes a TV signal of said selected channel into a signal for power line communications, and transmits to said television signal receiving set with a Request to Send, An information control part which transmits a TV signal which said television signal receiving set generated a channel selection signal corresponding to a channel which a user chose, and was changed by a power line modem part of a receiver to TV signal playback equipment.

A power line modem part of a receiver which changes into a signal for power line communications a channel selection signal which shows said selected channel, and changes into a TV signal with said selected channel control unit a signal for power line communications which it transmits to said television signal distribution system, and is sent out from said television signal distribution system.

**Claim 2** The TV signal distribution system comprising according to claim 1:

A channel selection section to which said channel control unit chooses a desired channel from said television signal receiving set with a channel selection signal sent via a power line, and it restores to an analog TV signal.

A channel identification part which generates a channel selection signal corresponding to a channel which has a data conversion part by the side of distribution which changes an analog TV signal of said selected channel into digital television data, and compresses it, and with which a user chose an information control part in said television signal receiving set.

A data conversion part of a receiver which elongates said compressed digital television data which was sent out from said television signal distribution system, and was changed in a power line modem part of a receiver, and is changed into the original analog baseband signal.

**Claim 3** The TV signal distribution system according to claim 1 or 2, wherein said television signal distribution system has a stowage which stores two or more independent TV signal distribution units which comprise said channel control unit and a power line modem part by the side of said distribution.

**Claim 4** A TV signal distribution system given in any 1 of claims 1 thru/or 3, wherein said information control part which said television signal receiving set was provided with a remote control which can direct a sound level to said information control part, and received directions of a sound level outputs an audio signal of a sound level which received said directions.

**Claim 5** Said television signal receiving set is built in television reception playback equipment which receives a picture and a sound from said television signal distribution system, and is reproduced, A TV signal distribution system given in any 1 of claims 1 thru/or 4, wherein

reception of a signal from current supply and a power line is possible for said television reception playback equipment via one power cable.

**Claim 6** Said television signal distribution system is built in television distribution playback equipment which a picture and a sound are distributed and is reproduced, A TV signal distribution system given in any 1 of claims 1 thru/or 4, wherein reception of a signal from current supply and a power line is possible for said television distribution playback equipment via one power cable.

**Claim 7** A TV signal distribution system given in any 1 of claims 1 thru/or 4 having a power receptacle characterized by comprising the following, and being able to connect between videocassette recorders with the television signal receiving set according to claim 5 without special wiring.

A power cable which said television signal receiving set is built in a videocassette recorder, and is provided with a function of both signal transmissions **as opposed to current supply and a power line into the deck in said videocassette recorder** .

A function to transmit a signal via current supply to the television signal receiving set according to claim 5, and a power cable of the television signal receiving set according to claim 5.

**Claim 8** A TV signal distribution system given in any 1 of claims 1 thru/or 4 having a power receptacle characterized by comprising the following, and being able to connect between videocassette recorders with the television signal receiving set according to claim 5 without special wiring.

A power cable which said television signal receiving set is built in a videocassette recorder, and is provided with a function of both signal transmissions **as opposed to current supply and a power line into the deck in said videocassette recorder** .

A function to transmit a signal via current supply to the television signal receiving set according to claim 5, and a power cable of the television signal receiving set according to claim 5.

MTJP2003018558

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] A television signal distribution system which this invention is arranged in the room with an antenna output terminal, and distributes a TV signal to each part store by making a power line into communication media. It is arranged in the room without an antenna output terminal, and is related with the TV signal distribution system which has a television signal receiving set which receives the TV signal distributed from said television distribution system.

[0002]

[Description of the Prior Art] When installing television conventionally, the antenna output terminal installed in the room and the input terminal of television are connected using a coaxial cable. If it is in this installation method, the setting position of television will be limited to the room which has an antenna output terminal for televisions tacitly, and makes flexibility of a layout low. In order to use the layout of hope, it is necessary to run the inside of the room using a long cable, and a scene may be hurt, and also the time and effort for connection is needed for the degree which is layout change.

[0003] There are a method of performing installation work of the dedicated line by a coaxial cable separately inside a wall as a method of building the environment where it can view and listen to television in each part store without spoiling a scene, and a method of using radio as a signal-transmission means. However, the former method requires cost, an electric wave is covered and the latter has the fault that stable reception cannot be performed between different rooms and in metal walls and a house with many obstacles.

[0004] Since two or more TV signals are overlapped on an antenna output terminal when using a means to change a TV signal into the original signal for transmission, a wide band is dramatically needed in order to distribute all the signals. Therefore, no TV signals can be distributed as they are, without processing anything by the distribution system side of a TV signal. That is, the structure for distributing only a required signal is needed.

[0005]

[Problem(s) to be Solved by the Invention] Thus, if it was in the conventional TV signal distribution system, installing [ except near the antenna output terminal ] television had the problem that it was difficult and could not but install in the room which has an antenna output terminal tacitly. In order to distribute a TV signal to the television installed in other rooms using others and a transmission means without providing a dedicated line, It had the problem that a

considerable wide band was needed and it was not practical only by changing into the data for transmission the TV signal received from the antenna output terminal, and distributing it simple as it is.

[0006]In this TV signal distribution system, to be able to view and listen to television easily also in the room without the antenna output terminal for televisions is demanded.

[0007]An object of this invention is to provide the TV signal distribution system which can view and listen to television easily also in the room without the antenna output terminal for televisions, in order to fill this demand.

[0008]

[Means for Solving the Problem]In order to solve above-mentioned SUBJECT a TV signal distribution system of this invention, A television signal distribution system which is arranged in a room with an antenna output terminal, and distributes a TV signal to each part store by making a power line into communication media, It is a TV signal distribution system which has a television signal receiving set which receives a TV signal which is arranged in a room without an antenna output terminal, and is distributed from a television signal distribution system, A channel control unit which supplies a TV signal which a television signal distribution system chooses a desired channel from a television signal receiving set with a channel selection signal sent via a power line, and corresponds, Have a power line modem part by the side of distribution which changes a TV signal of a channel selected to a television signal receiving set with a Request to Send into a signal for power line communications, and transmits, and a television signal receiving set, An information control part which a channel selection signal corresponding to a channel which a user chose is generated, and transmits a TV signal changed by a power line modem part of a receiver to TV signal playback equipment, Change into a signal for power line communications a channel selection signal which shows a selected channel, and transmit to a television signal distribution system, and. It has composition which has a power line modem part of a receiver which changes into a TV signal with a selected channel control unit a signal for power line communications sent out from a television signal distribution system.

[0009]A TV signal distribution system which can view and listen to television easily also in a room without an antenna output terminal for televisions by this is obtained.

[0010]

[Embodiment of the Invention]The TV signal distribution system of this invention according to claim 1, A television signal distribution system which is arranged in the room with an antenna output terminal, and distributes a TV signal to each part store by making a power line into communication media, It is a TV signal distribution system which has a television signal receiving set which receives the TV signal which is arranged in the room without an antenna output terminal, and is distributed from a television signal distribution system, The channel control unit which supplies the TV signal which a television signal distribution system chooses a desired channel from a television signal receiving set with the channel selection signal sent via a power line, and corresponds, Have a power line modem part by the side of the distribution which changes the TV signal of the channel selected to the television signal receiving set with a Request to Send into the signal for power line communications, and transmits, and a television signal receiving set, The information control part which the channel selection signal corresponding to the channel which the user chose is generated, and transmits the TV signal changed by the power line modem part of the receiver to TV signal playback equipment, Change into the signal for power line communications the channel selection signal which shows the selected channel, and transmit to a television signal distribution system, and. Suppose that it has

a power line modem part of the receiver which changes into a TV signal with the selected channel control unit the signal for power line communications sent out from a television signal distribution system.

[0011] Since the two-way communication which makes communication media the power line installed in each part store by this composition is possible, It compares with it being superimposed only on a desired TV signal and making all the TV signals superimpose on a power line using two-way communication, It has the operation that time to become possible to reduce a usage band required for a signal transmission and the processing burden in a distribution system by leaps and bounds, and transmit a TV signal can also be shortened. It has the operation that flexibility in case it becomes possible [ if installation of a television signal receiving set is near the power receptacle to which the power line was connected, it is good anywhere, and ] to make high flexibility of the layout at the time of the television installation which was a problem in the former, especially there are two or more televisions increases.

[0012] The TV signal distribution system of this invention according to claim 2, In the TV signal distribution system according to claim 1, a channel control unit, The channel selection section which chooses a desired channel and to which it restores to an analog TV signal with the channel selection signal sent via a power line from a television signal receiving set, Have a data conversion part by the side of the distribution which changes the analog TV signal of the selected channel into digital television data, and compresses it, and the information control part in a television signal receiving set, The channel identification part which generates the channel selection signal corresponding to the channel which the user chose, Suppose that it has a data conversion part of the receiver which elongates the compressed digital television data which was sent out from the television signal distribution system and changed in the power line modem part of a receiver, and is changed into the original analog baseband signal.

[0013] As compared with the case where can treat a TV signal as digital data and it is distributed in the state of an analog signal by this composition, it becomes possible to improve noise tolerance by an error correction etc. by the receiving set side, and has the operation of coming to be able to perform distribution of the more stable TV signal.

[0014] The TV signal distribution system according to claim 3, Suppose a television signal distribution system that it has a stowage which stores two or more independent TV signal distribution units which comprise a channel control unit, the data conversion part by the side of distribution, and the power line modem part by the side of distribution in the TV signal distribution system according to claim 1 or 2.

[0015] By this composition, it has the operation that an independent TV signal can be respectively distributed to each television signal receiving set.

[0016] The TV signal distribution system according to claim 4, In a TV signal distribution system given in any 1 of claims 1 thru/or 3, the information control part which the television signal receiving set was provided with the remote control which can direct a sound level to an information control part, and received directions of the sound level decides to output the audio signal of the sound level which received directions.

[0017] By this composition, it has the operation that the sound level in the TV signal playback equipment which reproduces a picture and a sound like a television receiver can be easily changed by remote control operation.

[0018] The TV signal distribution system according to claim 5, In a TV signal distribution system given in any 1 of claims 1 thru/or 4, A television signal receiving set is built in the television reception playback equipment which receives the picture and sound from a television signal

distribution system, and is reproduced, and television reception playback equipment is made possible [ reception of the signal from current supply and a power line ] via one power cable.

[0019]By this composition, a user has the operation that a TV signal is receivable, without carrying out special wiring.

[0020]The TV signal distribution system according to claim 6, In a TV signal distribution system given in any 1 of claims 1 thru/or 4, A television signal distribution system is built in the television distribution playback equipment which a picture and a sound are distributed and is reproduced, and television distribution playback equipment is made possible [ reception of the signal from current supply and a power line ] via one power cable.

[0021]By this composition, a user has the operation that a TV signal can be distributed, without carrying out special wiring.

[0022]The TV signal distribution system according to claim 7, In a TV signal distribution system given in any 1 of claims 1 thru/or 4, The power cable which a television signal distribution system is built in a videocassette recorder, and is provided with the function of both signal transmissions [ as opposed to the current supply and the power line into the deck in a videocassette recorder ], It has a power receptacle provided with the function to transmit a signal via the current supply to the television signal receiving set according to claim 5, and the power cable of the television signal receiving set according to claim 5, Transmission and reception of the current supply into a videocassette recorder and a signal with a power line are enabled via one power cable, and suppose further that transmission and reception of a signal with current supply and a television signal receiving set are also possible via the power cable of a television signal receiving set.

[0023]It can view and listen to television only by connecting to the antenna input terminal of a videocassette recorder the coaxial cable connected to the antenna output terminal installed in the room like before by this composition, and has the operation that the distribution of a TV signal to the receiving set installed in the separate place is attained. It has the operation that wiring between a videocassette recorder and playback equipment can be reduced by one. Since it is not necessary to multiplex by forming the transmission line where the power line became independent between a videocassette recorder and TV signal playback equipment, it also has the operation of not lowering the multiplicity on a power line.

[0024]The TV signal distribution system according to claim 8, In a TV signal distribution system given in any 1 of claims 1 thru/or 4, The power cable which a television signal receiving set is built in a videocassette recorder, and is provided with the function of both signal transmissions [ as opposed to the current supply and the power line into the deck in a videocassette recorder ], It has a power receptacle provided with the function to transmit a signal via the current supply to the television signal receiving set according to claim 5, and the power cable of the television signal receiving set according to claim 5, Transmission and reception of the current supply into a videocassette recorder and a signal with a power line are enabled via one power cable, and suppose further that transmission and reception of a signal with current supply and a television signal receiving set are also possible via the power cable of a television signal receiving set.

[0025]It can view and listen to television only by connecting the power cable of a television signal receiving set to the power receptacle provided in the videocassette recorder by this composition, and has the operation that wiring between a videocassette recorder and playback equipment can be reduced by one.

[0026]Hereafter, an embodiment of the invention is described using drawing 1 - drawing 8.

[0027](Embodiment 1) Drawing 1 is a block diagram showing the TV signal distribution system



by the embodiment of the invention 1.

[0028]In drawing 1, a television signal distribution system and 200 100 A television signal receiving set, The channel control unit which supplies the TV signal which the signal distribution box to which 101 distributes a signal, and 102 choose the channel of a request with the channel selection signal sent via a power line from the television signal receiving set 200, and corresponds, The power line modem part by the side of the distribution which 103 changes the TV signal selected by the channel control unit 102 into the signal for power line communications, and transmits the signal for power line communications to the television signal receiving set 200 with a Request to Send, The information control part which 201 chooses the channel of a desired TV signal, and supplies a TV signal to TV signal playback equipment, 202 changes into the signal for power line communications the channel selection signal which shows the selected channel, and transmits to the television signal distribution system 100, and it is a power line modem part of the receiver which changes into the original TV signal the signal for power line communications sent out from the television signal distribution system 100. The power receptacle by which 104 and 204 were connected with the power line, and 105 and 205 TV signal playback equipment, such as a television receiver, 106 receives an antenna output terminal, 107 receives a power line, and 206 receives the information control part 201, and point to the channel to choose, or, Remote controller [ indicating a sound level ] (remote control), room [ where RM1 has the antenna output terminal 106 ], and RM2 is a room without an antenna output terminal.

[0029]The operation is explained about the TV signal distribution system constituted in this way.

[0030]The television signal distribution system 100 is explained first. The signal distribution box 101 distributes the analog TV signal outputted from the antenna output terminal 106 to the input terminal and the channel control unit 102 of television. By being distributed from the signal distribution box 101, it can view and listen to television without a problem with the TV signal playback equipment 105. The channel control unit 102 memorizes the channel selection number which the channel selection signal transmitted from the power line modem part 103 shows, extracts only the channel signal concerned from the TV signal transmitted from the signal distribution box 101, and outputs the TV signal to the power line modem part 103. The power line modem part 103 changes into the signal for power line communications the TV signal outputted from the channel control unit 102, and superimposes this signal on a power line. On the contrary, the power line modem part 103 changes the signal for power line communications sent via the power line 107 into the channel selection signal transmitted to the channel control unit 102 from the television signal receiving set 200.

[0031]Next, the operation is explained about the television signal receiving set 200. The power line modem part 202 is changed into the usual TV signal (TV signal to which it can view and listen with the TV signal playback equipment 205, such as a television receiver) by changing into the original TV signal the signal for power line communications transmitted via the power line 107 from the television signal distribution system 100. The information control part 201 memorizes the channel number which the user chose, and transmits it to the power line modem part 202. The power line modem part 202 outputs the usual TV signal to the information control part 201 by separating the signal for power line communications transmitted via the power line 107 in the case of reception, and getting over. Conversely, in the case of transmission, the channel selection signal outputted from the information control part 201 is changed into the signal for power line communications, and this signal is superimposed on a power line.

[0032]Operation of the TV signal distribution system of drawing 1 is explained.

[0033]A user identifies the channel number selected via the remote controller 206 etc., and the information control part 201 memorizes the number concerned. The power line modem part 202 changes the channel selection signal from the information control part 201 into the signal for power line communications, and transmits the signal to the power line 107. By separating the signal for power line communications from the signal on the power line 107, and restoring to it, the power line modem part 103 acquires a channel selection signal, and transmits the channel selection number which the signal shows to the channel control unit 102. The channel control unit 102 memorizes the channel selection number, extracts only the TV signal of a request channel from the antenna output terminal 106, and transmits the TV signal to the power line modem part 103. The power line modem part 103 changes the TV signal into the signal for electric power communication, and superimposes the signal on the power line 107. The power line modem part 202 separates the signal for power line communications from the signal on the power line 107, and acquires the original TV signal by restoring to it. And the TV signal is transmitted to the information control part 201.

[0034]Drawing 2 is a lineblock diagram showing other examples of the channel control unit 102 and the information control part 201. The general drawing of not only a different portion from drawing 1 but the system is shown on account of explanation.

[0035]The channel selection section which 102 is a channel control unit in drawing 1, and 108 chooses a desired channel from the television signal receiving set 200 with the channel selection signal sent via a power line, and acquires a desired TV signal in drawing 2, 109 is a data conversion part by the side of the distribution which changes the TV signal of the selected channel into digital television data, and compresses it. The channel control unit 102 comprises the channel selection section 108 and the data conversion part 109. 201 is an information control part in drawing 1, and the channel identification part as which 208 chooses the channel of a desired TV signal, and 209 are the data conversion parts of the receiver which thaws compressed digital television data. The information control part 201 comprises the channel identification part 208 and the data conversion part 209. It is the same as that of drawing 1 except the composition of the channel control unit 102 and the information control part 201.

[0036]The operation is explained about the TV signal distribution system constituted in this way.

[0037]The television signal distribution system 100 is explained first. The signal distribution box 101 distributes the analog TV signal outputted from the antenna output terminal 106 to the input terminal and the channel selection section 108 of television. The channel selection section 108 memorizes the channel selection number which the channel selection signal transmitted from the power line modem part 103 shows, extracts only the channel signal concerned from the TV signal transmitted from the signal distribution box 101, and outputs the TV signal to the data conversion part 109. The data conversion part 109 changes into digital television data the TV signal transmitted from the channel selection section 108, and compresses it using an MPEG system etc. The power line modem part 103 changes into the signal for power line communications the compressed digital television data outputted from the data conversion part 109, and superimposes this signal on a power line. On the contrary, the power line modem part 103 changes the signal for power line communications sent via the power line 107 into the channel selection signal transmitted to the channel selection section 108 from the television signal receiving set 200.

[0038]Next, the operation is explained about the television signal receiving set 200. The power line modem part 202 is changed into the digital television data which compressed the signal for power line communications transmitted via the power line 107 from the television signal

distribution system 100, The data conversion part 209 is changed into the usual TV signal (TV signal to which it can view and listen with the TV signal playback equipment 205, such as a television receiver) by thawing digital television data compressed from the power line modem part 202. The channel identification part 208 memorizes the channel number which the user chose, and transmits it to the power line modem part 202. By separating the signal for power line communications transmitted via the power line 107 in the case of reception, and getting over, the power line modem part 202 generates compressed digital television data, and outputs this compressed digital television data to the data conversion part 209. Conversely, in the case of transmission, the channel selection signal outputted from the channel identification part 208 is changed into the signal for power line communications, and this signal is superimposed on the power line 107.

[0039]Operation of the TV signal distribution system of drawing 2 is explained.

[0040]A user identifies the channel number selected via the remote controller 206 etc., and the channel identification part 208 memorizes the number concerned. The power line modem part 202 changes the channel selection signal from the channel identification part 208 into the signal for power line communications, and transmits the data to the power line 107. By separating the signal for power line communications from the signal on the power line 107, and restoring to it, the power line modem part 103 acquires a channel selection signal, and transmits the channel selection number which the signal shows to the channel selection section 108. The channel selection section 108 memorizes the channel selection number, extracts only the TV signal of a request channel from the antenna output terminal 106, and transmits the TV signal to the data conversion part 109. The data conversion part 109 changes the TV signal into digital television data, and after compressing by using a MPEG method etc. further, it transmits compression digital television data to the power line modem part 103. The power line modem part 103 changes compression digital television data into the signal for electric power communication, and transmits the data to the power line 107. The power line modem part 202 separates the signal for power line communications from the signal on the power line 107, and obtains the compressed digital television data by restoring to it. And the compression digital television data is transmitted to the data conversion part 209. The data conversion part 209 thaws the compressed digital television data using the same means as the compression technology used with the television signal distribution system 100, and reconverts it to the usual TV signal.

[0041]Drawing 3 is a lineblock diagram showing other examples of the television signal distribution system 100.

[0042]In drawing 3, 102 and 103 are the same channel control unit as drawing 1, and a power line modem part, and 110 is a TV signal distribution unit by which the components 102 and 103 are carried. Although the signal distribution box 101, the channel control unit 102, and the power line modem part 103 are respectively single and comprise composition of drawing 1, Like drawing 3, unify the channel control unit 102 and the power line modem part 103, and unitization of these is carried out, A slot (stowage) is provided in the television signal distribution system 100 so that the additional extension of the unit (TV signal distribution unit) concerned can be carried out, and the television signal receiving set 200 and the TV signal distribution unit 110 are made to correspond to 1 to 1. It is possible to correspond flexibly by this, also when the number of the TV signal playback equipment 205, such as a television receiver, increases. In this case, as a method which makes two or more TV signals (that is, two or more signals for power line communications) multiplex on the power line 107, any of Frequency Division Multiplexing, Time Division Multiplexing, code division multiplexing, and an

orthogonal frequency division multiplex transmission system may be sufficient.

[0043]When transmitting a TV signal to the TV signal playback equipment 205, such as a television receiver and a monitor, from the television signal receiving set 200 in this embodiment, The television signal receiving set 200 is constituted so that a sound level can be changed with the television signal receiving set 200, and it enables it to operate a sound level with the remote controller 206. This becomes possible to make a channel change, volume change, etc. in television operation with the single remote controller 206, and a user's convenience improves.

[0044]According to this embodiment, as mentioned above the television signal distribution system 100, The channel control unit 102 which chooses a desired channel from the television signal receiving set 200 with the channel selection signal sent via the power line 107, Have the power line modem part 103 by the side of the distribution which changes a TV signal into the signal for power line communications, and transmits to the television signal receiving set 200 with a Request to Send, and the television signal receiving set 200, The information control part 201 which the channel selection signal corresponding to the channel for which a user asks is generated, and transmits the TV signal changed by the power line modem part 202 of the receiver to the TV signal playback equipment 205, By having the power line modem part 202 of the receiver which changes a channel selection signal into the signal for power line communications, and changes into the original TV signal the signal for power line communications which it transmits to the television signal distribution system 100, and is sent out from the television signal distribution system 100, It compares with it being superimposed only on a desired TV signal and making all the TV signals superimpose on a power line using two-way communication, since the two-way communication which makes communication media the power line installed in each part store is possible, Time to become possible to reduce a usage band required for a signal transmission and the processing burden in a distribution system by leaps and bounds, and transmit a TV signal can also be shortened. Flexibility in case it becomes possible [ if installation of the television signal receiving set 201 is near the power receptacle 204 to which the power line 107 was connected, it is good anywhere, and ] to make high flexibility of the layout at the time of the television installation which was a problem in the former, especially there are two or more televisions increases.

[0045](Embodiment 2) Drawing 4 is a block diagram showing the television reception playback equipment which constitutes the TV signal distribution system by the embodiment of the invention 2. This embodiment builds the television signal receiving set 200 of drawing 1 in the TV signal playback equipment 205, such as a television receiver and a monitor. When built, it enables it for one power cable to perform transfer of the current supply to the TV signal playback equipment 205, and the signal for power line communications, and current supply to the television signal receiving set 200.

[0046]In drawing 4, 300 is television reception playback equipment and the television reception playback equipment 300 is provided with the following.

Information control part 301.

Television display part 302.

Power line modem part 303.

A power supply / signal separation part 304 for communication.

[0047]The operation is explained about the television reception playback equipment 300 constituted in this way. The information control part 301 memorizes the channel number which

the user chose in the case of transmission, and transmits it to the power line modem part 303. Conversely, in the case of reception, the TV signal transmitted from the power line modem part 303 is outputted to the television display part 302. The television display part 302 outputs an image and a sound according to a TV signal. The power line modem part 303 separates only the desired signal for power line communications in the case of reception, recovers from the signal on which the power line 107 was overlapped at it, and is transmitted to the information control part 301. Conversely, in the case of transmission, the channel selection signal outputted from the information control part 301 is changed into the signal for power line communications, and this signal is superimposed on the power line 107. A power supply / signal separation part 304 for communication carries out the separated extract of the commercial power frequency for current supply, and the frequency of the signal for power line communications from the power line 107, the signal for current supply rectifies, and it supplies it to each part, and transmits the signal for power line communications to the power line modem part 303.

[0048]As mentioned above, according to this embodiment, the connection between terminals for the TV signal transfer between the television display part 302 as TV signal playback equipment and the television signal receiving set 200 becomes unnecessary, and the time and effort and cost of wiring by a coaxial cable etc. can be excluded. Since viewing and listening of television is attained only by connecting the power cable of the television reception playback equipment 300 to a power receptacle, a user's convenience can improve and the danger of spoiling a scene can also be made to cancel.

[0049](Embodiment 3) Drawing 5 is a block diagram showing the television distribution playback equipment which constitutes the TV signal distribution system by the embodiment of the invention 3. This embodiment builds the television signal distribution system 100 in TV signal playback equipment, such as a television receiver and a monitor. Under the present circumstances, it enables it for one power cable to perform transfer of the current supply to TV signal playback equipment, and the signal for power line communications, and current supply to a television signal distribution system like Embodiment 2.

[0050]In drawing 5, 400 is television distribution playback equipment and the television distribution playback equipment 400 is provided with the following.

Signal distribution part 401.

TV signal treating part 402.

The indicator 403 as TV signal playback equipment.

The channel control unit 404, the power line modem part 405, and signal separation a power supply / part for communication 406.

[0051]The operation is explained about the television distribution playback equipment 400 constituted in this way.

[0052]The signal distribution part 401 distributes the analog TV signal outputted from the antenna output terminal 106 to the TV signal treating part 402 and the channel control unit 404. The TV signal treating part 402 is extracted out of the TV signal to which the TV signal corresponding to the channel number selected in the television distribution playback equipment 400 having the television signal distribution system 100 is transmitted from the signal distribution part 401, and is changed into the signal which can be displayed by the indicator 403. The indicator 403 is displayed on a monitor in response to this changed signal. The channel control unit 404 memorizes the channel number transmitted from the power line modem part 405, extracts only the channel signal concerned from the TV signal transmitted from the signal

distribution part 401, and outputs the TV signal to the power line modem part 405. The power line modem part 405 changes into the signal for power line communications the TV signal outputted from the channel control unit 404, and superimposes this signal on a power line. On the contrary, the signal for power line communications sent via the power line 107 is recovered from the television signal receiving set 200 to the channel selection signal transmitted to the channel control unit 404. A power supply / signal separation part 406 for communication carries out the separated extract of the commercial power frequency for current supply, and the frequency of the signal for power line communications from the power line 107, the signal for current supply rectifies, and it supplies it to each part, and transmits the signal for power line communications to the power line modem part 405.

[0053]Only by connecting to the antenna input terminal of the television signal distribution system 100 the coaxial cable linked to the antenna output terminal 106 installed in the room as mentioned above according to this embodiment, It can view and listen to television, and also the distribution of a TV signal to the television signal receiving set 200 installed independently is attained. Thus, with the same connection method as usual, since a network required for a TV signal distribution system is formed, a user does not need to be conscious of a system.

[0054](Embodiment 4) Drawing 6 is a block diagram showing the videocassette recorder which constitutes the TV signal distribution system by the embodiment of the invention 4. In this embodiment, the television signal distribution system 100 of drawing 1 is built in a videocassette recorder. Under the present circumstances, the power receptacle for TV signal playback equipment is provided in a videocassette recorder, and the power cable for TV signal playback equipment is connected to the power receptacle concerned.

[0055]In drawing 6, 500 is a videocassette recorder and this videocassette recorder 500 is provided with the following.

Signal distribution part 501.

Channel control units 502 and 504.

Power line modem parts 503 and 505.

The video-signal-processing part 506, the power receptacle 507, and a power supply / signal separation part 508 for communication, the power supplying part 509.

[0056]The operation is explained about the videocassette recorder 500 constituted in this way.

[0057]The signal distribution part 501 distributes the analog TV signal outputted from the antenna output terminal 106 to the channel control unit 502 and the channel control unit 504. The channel control unit 502 memorizes the channel number transmitted from the power line modem part 503, extracts only the TV signal corresponding to the channel number concerned from the TV signal transmitted from the signal distribution part 501, and outputs the TV signal to the power line modem part 503. The picture signal and audio signal as a video signal which are transmitted from the video-signal-processing part 506 are also similarly transmitted to the power line modem part 503. Under the present circumstances, in the channel control unit 502, the change of a TV signal and a video signal is also performed simultaneously. The channel control unit 504 memorizes the channel selection number which the channel selection signal transmitted from the power line modem part 505 shows, Only the TV signal corresponding to the channel number concerned is extracted from the TV signal transmitted from the signal distribution part 501, and the TV signal is transmitted to the power line modem part 503. The power line modem part 503 changes into the signal for power line communications the television or the video signal outputted from the channel control unit 502, and outputs this signal to the power receptacle 507.

On the contrary, the power line modem part 503 changes the channel number changed into the signal for power line communications sent via a power cable and the power receptacle 507 from the television signal receiving set 200 side into the signal (that is, channel selection signal) transmitted to the channel control unit 502. The power receptacle 507 is formed in order to perform supply of electric power, and transfer of the signal for power line communications to the television reception playback equipment 300. The power source plug of a television signal receiving set is connected to the power receptacle 507. The video-signal-processing part 506 reads the contents of the videocassette, and transmits them to the channel control unit 502.

[0058]The power line modem part 505 changes into the signal for power line communications the TV signal outputted from the channel control unit 504, and outputs this signal to a power supply / signal separation part 508 for communication. On the contrary, the power line modem part 505, The channel number changed into the signal for power line communications sent via the power line 107, and signal separation a power supply / part for communication 508 from other television signal receiving sets 200 (refer to drawing 1) is changed into the signal (that is, channel selection signal) transmitted to the channel control unit 504. A power supply / signal separation part 508 for communication carries out the separated extract of the commercial power frequency for current supply, and the frequency of the signal for power line communications from the power line 107, outputs the signal for current supply to the power supplying part 509, and transmits the signal for power line communications to the power line modem part 505. The power supplying part 509 supplies electric power to each part of videocassette recorder 500 inside. It is constituted so that it may see from the power receptacle 507 and may become high impedance. The power supply side of the television signal receiving set with which electric power is supplied from the power receptacle 507 is separated from the above-mentioned commercial power by this composition, and the transmission line between the television signal receiving set 200 and the videocassette recorder 500 will become independent.

[0059]Drawing 7 is a connection diagram showing the example of connection of the videocassette recorder 500, each device, etc.

[0060]In drawing 7, the power receptacle by which the antenna output terminal as drawing 6 with 106 [ same ] and 300 were connected to television reception playback equipment (refer to drawing 4), and 104 was connected to the power line 107 (refer to drawing 1), and 507 are the same power receptacles as drawing 6.

[0061]Since it will become the same with having been connected with the power supply in communicative [ both ] if it inserts in the power receptacle 507 in which the power cable of the television reception playback equipment 300 was carried by the videocassette recorder 500 like drawing 7, Wiring between the television reception playback equipment 300 and the videocassette recorder 500 becomes unnecessary, and it becomes possible to save the time and effort which a user wires.

[0062]Although this embodiment showed the example which built the television signal distribution system 100 in the videocassette recorder 500, it is also possible to build in the television signal receiving set 200 (drawing 1) similarly.

[0063]Drawing 8 is a connection diagram showing the example of connection when not arranging TV signal playback equipment near the antenna output terminal 106.

[0064]In drawing 8, the television signal distribution system as drawing 1 with 100 [ same ], the power receptacle as drawing 1 with 104 [ same ], the television signal receiving set as drawing 1 with 200 [ same ], the TV signal playback equipment as drawing 4 with 300 [ same ], and 204 are the same power receptacles as drawing 1. As shown in drawing 8, it is also possible to install

only the television signal distribution system 100 near the antenna output terminal 106.

[0065] Thus, various gestalten can be considered as a mutual topology of the television signal distribution system 100, the television signal receiving set 200, and the television reception playback equipment 300.

[0066] According to this embodiment, the television signal distribution system 100 or the television signal receiving set 200 is built in the videocassette recorder 500 as mentioned above, and the videocassette recorder 500, Have the power receptacle 507 connected to one power cable, and via one power cable according to reception of the signal from current supply and a power line being possible. The television reception playback equipment 300 can receive current supply via the power receptacle 507, and can input a TV signal without special wiring from the videocassette recorder 500.

[0067]

[Effect of the Invention] As explained above, according to the TV signal distribution system of this invention according to claim 1. A television signal distribution system which is arranged in the room with an antenna output terminal, and distributes a TV signal to each part store by making a power line into communication media, It is a TV signal distribution system which has a television signal receiving set which receives the TV signal which is arranged in the room without an antenna output terminal, and is distributed from a television signal distribution system, The channel control unit which supplies the TV signal which a television signal distribution system chooses a desired channel from a television signal receiving set with the channel selection signal sent via a power line, and corresponds, Have a power line modem part by the side of the distribution which changes the TV signal of the channel selected to the television signal receiving set with a Request to Send into the signal for power line communications, and transmits, and a television signal receiving set, The information control part which the channel selection signal corresponding to the channel which the user chose is generated, and transmits the TV signal changed by the power line modem part of the receiver to TV signal playback equipment, Change into the signal for power line communications the channel selection signal which shows the selected channel, and transmit to a television signal distribution system, and. By having a power line modem part of the receiver which changes into a TV signal with the selected channel control unit the signal for power line communications sent out from a television signal distribution system, Since the two-way communication which makes communication media the power line installed in each part store is possible, It compares with it being superimposed only on a desired TV signal and making all the TV signals superimpose on a power line using two-way communication, The advantageous effect that time to become possible to reduce a usage band required for a signal transmission and the processing burden in a distribution system by leaps and bounds, and transmit a TV signal can also be shortened is acquired. If installation of a television signal receiving set is near the power receptacle to which the power line was connected, it is good anywhere, The advantageous effect that flexibility in case it becomes possible to make high flexibility of the layout at the time of the television installation which was a problem in the former, especially there are two or more televisions increases is acquired.

[0068] According to the TV signal distribution system of this invention according to claim 2, in the TV signal distribution system according to claim 1 a channel control unit, The channel selection section by the side of the distribution which chooses a desired channel and to which it restores to an analog TV signal with the channel selection signal sent via a power line from a television signal receiving set, Have a data conversion part by the side of the distribution which



changes the analog TV signal of the selected channel into digital television data, and compresses it, and an information control part, The channel identification part which generates the channel selection signal corresponding to the channel which the user chose, By having a data conversion part of the receiver which elongates the compression digital television data by which it was sent out from the television signal distribution system, and to which it restored in the power line modem part of a receiver, and is changed into the original analog TV signal, Since a TV signal can be treated as digital data, as compared with the case where it distributes in the state of an analog signal, it becomes possible to improve noise tolerance by an error correction etc. by the receiving set side, and the advantageous effect that the more stable TV signal can be distributed is acquired.

[0069]According to the TV signal distribution system according to claim 3, in the TV signal distribution system according to claim 1 or 2 a television signal distribution system, By having a stowage which stores two or more independent TV signal distribution units which comprise a channel control unit and the power line modem part by the side of distribution, the advantageous effect that an independent TV signal can be respectively distributed to each television signal receiving set is acquired.

[0070]In [ according to the TV signal distribution system according to claim 4 ] a TV signal distribution system given in any 1 of 1 thru/or 3, The information control part which the television signal receiving set was provided with the remote control which can direct a sound level to an information control part, and received directions of the sound level, By outputting the audio signal of the sound level which received directions, the advantageous effect that the sound level in the TV signal playback equipment which reproduces a picture and a sound like a television receiver can be easily changed by remote control operation is acquired.

[0071]In [ according to the TV signal distribution system according to claim 5 ] a TV signal distribution system given in any 1 of claims 1 thru/or 4, A television signal receiving set is built in the television reception playback equipment which receives the picture and sound from a television signal distribution system, and is reproduced, The advantageous effect that the user can receive a TV signal according to reception of the signal from current supply and a power line being possible for television reception playback equipment via one power cable without carrying out special wiring is acquired.

[0072]In [ according to the TV signal distribution system according to claim 6 ] a TV signal distribution system given in any 1 of claims 1 thru/or 4, A television signal distribution system is built in the television distribution playback equipment which a picture and a sound are distributed and is reproduced, and television distribution playback equipment via one power cable according to reception of the signal from current supply and a power line being possible. The advantageous effect that the user can distribute a TV signal without carrying out special wiring is acquired.

[0073]In [ according to the TV signal distribution system according to claim 7 ] a TV signal distribution system given in any 1 of claims 1 thru/or 4, The power cable which a television signal distribution system is built in a videocassette recorder, and is provided with the function of both signal transmissions [ as opposed to the current supply and the power line into the deck in a videocassette recorder ], It has a power receptacle provided with the function to transmit a signal via the current supply to the television signal receiving set according to claim 5, and the power cable of the television signal receiving set according to claim 5, Transmission and reception of the current supply into a videocassette recorder and a signal with a power line are enabled via one power cable, By furthermore enabling transmission and reception of a signal with current

supply and a television signal receiving set via the power cable of a television signal receiving set, It can view and listen to television only by connecting to the antenna input terminal of a videocassette recorder the coaxial cable connected to the antenna output terminal installed in the room like before, and the advantageous effect that the distribution of a TV signal to the receiving set installed in the separate place is attained is acquired. The advantageous effect that wiring between a videocassette recorder and playback equipment can be reduced by one is acquired. Since it is not necessary to multiplex by forming the transmission line where the power line became independent between a videocassette recorder and TV signal playback equipment, the advantageous effect of not lowering the multiplicity on a power line is acquired.

[0074]The TV signal distribution system according to claim 8, In a TV signal distribution system given in any 1 of claims 1 thru/or 4, The power cable which a television signal receiving set is built in a videocassette recorder, and is provided with the function of both signal transmissions [ as opposed to the current supply and the power line into the deck in a videocassette recorder ], It has a power receptacle provided with the function to transmit a signal via the current supply to the television signal receiving set according to claim 5, and the power cable of the television signal receiving set according to claim 5, Transmission and reception of the current supply into a videocassette recorder and a signal with a power line are enabled via one power cable, By furthermore enabling transmission and reception of a signal with current supply and a television signal receiving set via the power cable of a television signal receiving set, It can view and listen to television only by connecting the power cable of a television signal receiving set to the power receptacle provided in the videocassette recorder, and the advantageous effect that wiring between a videocassette recorder and playback equipment can be reduced by one is acquired.

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[Translation done.]